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Matrices de Stokes et groupe de Galois des équations hypergéometriques confluentes generalisées. (Stokes matrices and Galois groups of generalized confluent hypergeometric equations). (French) Zbl 0705.34068

Pac. J. Math. 138, No. 1, 25-56 (1989).

The authors consider the differential operator

$$D_{q,p} = (-1)^{q-p} z \prod_{j=1}^{p} (\vartheta + \mu_j) - \prod_{j=1}^{q} (\vartheta + \nu_j - 1),$$

where ϑ stands for the Euler operator zd/dz; $\mu_1, \mu_2, ..., \nu_q$ are given complex parameters while p and q are certain natural numbers such that $\mu_i - \mu_j$ are not entire, $p \geq 1$ and $q \geq p+1$. Their main aim is to establish, in each one of certain appropriately designed consecutive sectors, a set of fundamental solutions to $D_{q,p} u = 0$ such that the asymptotic expansions of these solutions, valid near the point $z = \infty$, are prescribed. In the first section of the paper they study the matrices (named: Stokes Matrices) which permit one to translate the system of solution valid in a sector to the solutions in the next sector over the intersections of these sectors. To this end they transform first the given equation through the Mellin transform and then use the classical inverse transform integral. The second section of the paper is devoted to the investigation of the group properties of the operators $D_{3,1}$ and $D_{3,2}$.

Reviewer: M.Idemen

MSC:

34E05 Asymptotic expansions of solutions to ordinary differential equations

Cited in **1** Review
Cited in **14** Documents

Keywords:

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